Attorney's Docket No.: 06618-408001 / CIT2942 USC

Serial No.: 09/489,515 Filed : January 21, 2000

Applicant: S. R. Narayanan, et al.

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## Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application: **Listing of Claims:** 

1-10. (Cancelled)

- 11. (Currently Amended) A process for making an electrode for a fuel cell, comprising consisting essentially of:
- (a) providing a catalyst ink comprising a catalytic material, a membrane plasticizer, and poly(vinylidene fluoride); and
  - (b) applying the catalyst ink to at least one side of a substrate; and
  - (c) drying the catalyst ink on the substrate.
- 12. (Previously presented) The process of claim 11, wherein the substrate is a membrane.
- 13. (Previously presented) The process of claim 12, wherein the membrane is a PSSA-PVDF membrane.
- 14. (Previously presented) The process of claim 11, wherein the ink further comprises a plasticizer.
- 15. (Previously presented) The process of claim 14, wherein the plasticizer is N,N dimethylacetamide.
- 16. (Currently Amended) The process of claim 12, further eomprising consisting essentially of roughening a surface of the membrane prior to applying the catalyst ink.
  - 17. (Previously presented) The process of claim 12, wherein the substrate is a backing.
- 18. (Previously presented) The process of claim 17, wherein the backing is a carbon paper.
- 19. (Currently Amended) A process for making a membrane electrode assembly for a fuel cell, comprising:
- (a) providing a catalyst ink comprising a catalytic material, a membrane plasticizer, and poly(vinylidene fluoride);
  - (b) applying the catalyst ink to at least one side of a membrane; and

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(c) bonding the membrane to at least one electrode.

20. (Previously presented) The process of claim 19, wherein the membrane is bonded to the electrode at a temperature of greater than about 180 °C.

- 21. (Previously presented) The process of claim 19, wherein the catalyst ink further comprises a plasticizer.
- 22. (Previously presented) The process of claim 21, wherein the plasticizer is N,N dimethylacetamide.
- 23. (Previously presented) The process of claim 19, further comprising adding to the catalyst ink a second ionomer comprising a liquid copolymer of tetrafluoroethylene and perfluorovinylethersulfonic acid.
- 24. (Previously presented) The process of claim 19, further comprising roughening a surface of the membrane prior to applying the catalyst ink.
- 25. (Previously presented) The process of claim 19, wherein the electrode comprises a catalyst layer comprising a catalytic material selected from Pt, Pt/Ru and an ionomer.
- 26. (Currently Amended) A fuel cell comprising a membrane electrode assembly, wherein the membrane electrode assembly is made by the process of:
- (a) providing a catalyst ink comprising a catalytic material, a membrane plasticizer, and poly(vinylidene fluoride);
  - (b) applying the catalyst ink to at least one side of a membrane; and
  - (c) bonding the membrane to at least one electrode.
  - 27. (New) A process for making an electrode for a fuel cell, comprising:
- (a) providing a catalyst ink comprising a catalytic material, and poly(vinylidene fluoride); and
  - (b) applying the catalyst ink to at least one side of a membrane.
  - 28. (New) The process of claim 27, wherein the membrane is a PSSA-PVDF membrane.
  - 29. (New) The process of claim 27, wherein the ink further comprises a plasticizer.

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30. (New) The process of claim 29, wherein the plasticizer is N,N dimethylacetamide.

31. (New) The process of claim 27, further comprising roughening a surface of the membrane prior to applying the catalyst ink.